

IN THE CLAIMS

Please amend the claims as follows:

Claim 1 (Previously Presented): A color image forming apparatus, comprising:

an image generating mechanism including,

an image forming mechanism configured to form a color image and including  
a plurality of image creating mechanisms configured to form an image via a photosensitive  
member,

an optical writing mechanism configured to optically write an image on the  
photosensitive member of each of the plurality of image creating mechanisms,

an intermediate image-transfer member including an image transfer bed  
moving in a predetermined direction in a lower part of the intermediate image-transfer  
member to receive on a surface of the image transfer bed a transfer of a plurality of the  
images from the respective photosensitive members of the plurality of image creating  
mechanisms such that the plurality of the images are sequentially overlaid to form a multi-  
overlaid image,

a fixing mechanism configured to fix the multi-overlaid image on a recording  
sheet,

a sheet ejecting mechanism configured to eject the recording sheet having the  
fixed multi-overlaid image thereon,

a toner container configured to replenish toner to the image forming  
mechanism, and

an electric circuit which includes a plurality of circuit blocks and supplies  
power and necessary signals to the apparatus; and

a sheet supply mechanism configured to supply recording sheets through a sheet inlet thereof to the image generating mechanism,

wherein the intermediate image-transfer member is arranged with a predetermined angle relative to a horizontal line such that a rear side of the intermediate image-transfer member away from the recording sheet is lifted and a front side of the intermediate image-transfer member closer to the recording sheet is lowered, and

wherein the plurality of image creating mechanisms are aligned in parallel and are arranged along and parallel to the image transfer bed of the intermediate image-transfer member such that one of the plurality of image creating mechanisms firstly forming an image faces the rear side of the image transfer bed and another one of the plurality of image creating mechanisms lastly forming an image faces the front side of the image transfer bed.

Claim 2 (Original): The color image forming apparatus as defined in Claim 1,

wherein the image generating mechanism further comprises a secondary image-transfer member configured to contact the intermediate image-transfer member to transfer the multi-overlaid image onto the recording sheet from the intermediate image-transfer member, and

wherein the sheet inlet of the sheet supply mechanism, the secondary image-transfer member, the fixing mechanism, and the sheet ejection mechanism are arranged in this order at positions from a lower region to an upper region, and a sheet conveying path provided in an area covering from the sheet inlet to the sheet ejection mechanism through the secondary image-transfer member and the fixing mechanism is extended in nearly a straight manner in a vertical direction in the image generating mechanism.

Claim 3 (Original): The color image forming apparatus as defined in Claim 1, wherein the toner container is arranged over the intermediate image-transfer member, the optical writing mechanism is arranged under the image forming mechanism, and the toner container is arranged substantially with the predetermined angle to be parallel with the image transfer bed of the intermediate image-transfer member.

Claim 4 (Original): The color image forming apparatus as defined in Claim 3, wherein the plurality of image creating mechanisms form images of different colors, the toner container includes a plurality of toner cartridges containing toners of the different colors used by the plurality of image creating mechanisms, and a placement order of the plurality of image creating mechanisms is same in color of toner as that of the plurality of toner cartridges.

Claim 5 (Original): The color image forming apparatus as defined in Claim 4, wherein distances of sheet paths provided for the toners of the different colors between the plurality of image creating mechanisms and the plurality of toner cartridges are substantially equivalent.

Claim 6 (Original): The color image forming apparatus as defined in Claim 4, wherein one or more of the plurality of toner cartridges have a toner capacity different than other toner cartridges of the apparatus.

Claim 7 (Original): The color image forming apparatus as defined in Claim 3, wherein the toner cartridges are aligned in parallel in a direction from a front side to a rear side of the apparatus such that one which is closer to the rear side has a higher profile, and

wherein the toner cartridges are mounted at positions where the toner cartridges are externally accessible for exchanges with new cartridges when an upper cover of the apparatus is upwardly opened.

Claim 8 (Original): The color image forming apparatus as defined in Claim 1, wherein the image generating mechanism forms a space having a cross section of approximately triangular shape underneath the optical writing mechanism, and

wherein a part of the electrical circuit is accommodated in the space.

Claim 9 (Original): The color image forming apparatus as defined in Claim 8, wherein a part of the electrical circuit accommodated in the space underneath the optical writing mechanism is a control unit.

Claim 10 (Original): The color image forming apparatus as defined in Claim 9, wherein another part of the electrical circuit is a power supply unit mounted outside the space and in the rear side of the apparatus behind the intermediate image-transfer member.

Claim 11 (Original): The color image forming apparatus as defined in Claim 3, wherein when an origin of x-y coordination is assigned to a rearmost point of the apparatus at a horizontal level of a sheet separation point, T1 and T2 are highest and lowest points, respectively, of a rearmost toner cartridge of the plurality of toner cartridges closest to a rear

end of the apparatus, T3 and T4 are highest and lowest points, respectively, of a forefront toner cartridge of the plurality of toner cartridges closest to a front end of the apparatus, HS is a sheet ejection point, TT is a fixing nip center of the fixing mechanism, T1(y) is a highest point in the apparatus, and T1(y) and TT(x) satisfy an inequality  $T1(y) \leq TT(x)$ .

Claim 12 (Original): The color image forming apparatus as defined in Claim 11, wherein TT(y) and T3(y) satisfy an inequality  $TT(y) \leq T3(y)$ .

Claim 13 (Original): The color image forming apparatus as defined in Claim 11, wherein T3(y), T4(y), and TT(y) satisfy inequalities  $T4(y) \leq TT(y) \leq T3(y)$ .

Claim 14 (Original): The color image forming apparatus as defined in Claim 11, wherein HS(y) and T1(y) satisfy an inequality  $HS(y) \leq T1(y)$ .

Claim 15 (Original): The color image forming apparatus as defined in Claim 11, wherein T2(y), HS(y), and T1(y) satisfy inequalities  $T2(y) \leq HS(y) \leq T1(y)$ .

Claim 16 (Original): The color image forming apparatus as defined in Claim 1, wherein the predetermined angle with which the intermediate image-transfer member is tilted is in a range between approximately 5 degrees and 25 degrees.

Claim 17 (Previously Presented): A color image forming apparatus comprising:  
image generating means including,  
image forming means for forming a color image, the image forming means including

a plurality of image creating means for forming an image via photosensitive means for sensing light information,

optical writing means for optically writing an image on the photosensitive means of each of the plurality of image creating means,

intermediate image-transfer means for transferring a plurality of the images from the respective photosensitive means to a recording sheet such that the plurality of the images are sequentially overlaid to form a multi-overlaid image, the intermediate image-transfer means including an image transfer bed having a surface moving in a predetermined direction in a lower part of the intermediate transfer means,

fixing means for fixing the multi-overlaid image on the recording sheet, sheet ejecting means for ejecting the recording sheet having the fixed multi-overlaid image thereon,

toner supply means for replenishing color toner to the image forming means, and

electric circuit means for supplying power and necessary signals to the apparatus, the electric circuit means including a plurality of circuit blocks; and

sheet supplying means for supplying recording sheets through a sheet inlet thereof to the image generating means,

wherein the intermediate image-transfer means is arranged with a predetermined angle relative to a horizontal line such that a rear side of the intermediate image-transfer means away from the recording sheet is lifted and a front side of the intermediate image-transfer means closer to the recording sheet is lowered, and

wherein the plurality of image creating means are aligned in parallel and are arranged along and parallel to the image transfer bed of the intermediate image-transfer means such

that one of the plurality of image creating means firstly forming an image faces the rear side of the image transfer bed and another one of the plurality of image creating means lastly forming an image faces the front side of the image transfer bed.

Claim 18 (Original): The color image forming apparatus as defined in Claim 17, wherein the image generating means further includes a secondary image-transfer means for contacting the intermediate image-transfer means to transfer the multi-overlaid image onto the recording sheet from the intermediate image-transfer means, and

wherein the sheet inlet of the sheet supply means, the secondary image-transfer means, the fixing means, and the sheet ejection means are arranged in this order at positions from a lower region to an upper region, and a sheet conveying path provided in an area covering from the sheet inlet to the sheet ejection means through the secondary image-transfer means and the fixing means is extended in nearly a straight manner in a vertical direction in the image generating means.

Claim 19 (Original): The color image forming apparatus as defined in Claim 17, wherein the toner supply means is arranged over the intermediate image-transfer means, the optical writing means is arranged under the image forming means, and the toner supply means is arranged substantially with the predetermined angle to be parallel with the image transfer bed of the intermediate image-transfer means.

Claim 20 (Original): The color image forming apparatus as defined in Claim 19, wherein the plurality of image creating means form images of different colors, the toner supply means includes a plurality of toner cartridges containing toners of the different colors

used by the plurality of image creating means, and a placement order of the plurality of image creating means is same in color of toner as that of the plurality of toner cartridges.

Claim 21 (Original): The color image forming apparatus as defined in Claim 20, wherein distances of sheet paths provided for the toners of the different colors between the plurality of image creating means and the plurality of toner cartridges are substantially equivalent.

Claim 22 (Original): The color image forming apparatus as defined in Claim 20, wherein one or more of the plurality of toner cartridges have a toner capacity different than other toner cartridges of the apparatus.

Claim 23 (Original): The color image forming apparatus as defined in Claim 19, wherein the plurality of toner cartridges are aligned in parallel in a direction from a front side to a rear side of the apparatus such that one which is closer to the rear side has a higher profile, and

wherein the toner cartridges are mounted at positions where the toner cartridges are externally accessible for exchanges with new cartridges when an upper cover of the apparatus is upwardly opened.

Claim 24 (Original): A color image forming apparatus as defined in Claim 17, wherein the image generating means forms a space having a cross section of approximately triangular shape underneath the optical writing means, and wherein a part of the electrical circuit means is accommodated in the space.



Claim 25 (Original): The color image forming apparatus as defined in Claim 24, wherein a part of the electrical circuit means accommodated in the space underneath the optical writing means is a control unit.

Claim 26 (Original): The color image forming apparatus as defined in Claim 25, wherein another part of the electrical circuit means is a power supply unit mounted outside the space and in the rear side of the apparatus behind the intermediate image-transfer means.

Claim 27 (Original): The color image forming apparatus as defined in Claim 19, wherein when an origin of x-y coordination is assigned to a rearmost point of the apparatus at a horizontal level of a sheet separation point, T1 and T2 are highest and lowest points, respectively, of a rearmost toner cartridge of the plurality of toner cartridges closest to a rear end of the apparatus, T3 and T4 are highest and lowest points, respectively, of a forefront toner cartridge of the plurality of toner cartridges closest to a front end of the apparatus, HS is a sheet ejection point, TT is a fixing nip center of the fixing means, T1(y) is a highest point in the apparatus, and T1(y) and TT(x) satisfy an inequality  $T1(y) \leq TT(x)$ .

Claim 28 (Original): The color image forming apparatus as defined in Claim 27, wherein TT(y) and T3(y) satisfy an inequality  $TT(y) \leq T3(y)$ .

Claim 29 (Original): The color image forming apparatus as defined in Claim 27, wherein T3(y), T4(y), and TT(y) satisfy inequalities  $T4(y) \leq TT(y) \leq T3(y)$ .

Claim 30 (Original): The color image forming apparatus as defined in Claim 27, wherein  $HS(y)$  and  $T1(y)$  satisfy an inequality  $HS(y) \leq T1(y)$ .

Claim 31 (Original): The color image forming apparatus as defined in Claim 27, wherein  $T2(y)$ ,  $HS(y)$ , and  $T1(y)$  satisfy inequalities  $T2(y) \leq HS(y) \leq T1(y)$ .

Claim 32 (Original): The color image forming apparatus as defined in Claim 17, wherein the predetermined angle with which the intermediate image-transfer means is tilted is in a range between approximately 5 degrees and 25 degrees.

Claim 33 (Previously Presented): A method of making a color image forming apparatus, the color image forming apparatus including,

an image generating mechanism including an image forming mechanism configured to form a color image and a plurality of image creating means for forming an image via a photosensitive member configured to sense light information,

an optical writing mechanism configured to optically write an image on the photosensitive member of each of the plurality of image creating mechanisms,

an intermediate image-transfer member including an image transfer bed moving in a predetermined direction in a lower part of the intermediate image-transfer member to receive on a surface of the image transfer bed a transfer of a plurality of the images from the respective photosensitive members of the plurality of image creating mechanisms, such that the plurality of the images are sequentially overlaid to form a multi-overlaid image,

a fixing mechanism configured to fix the multi-overlaid image on a recording sheet,

a sheet ejecting mechanism configured to eject the recording sheet having the fixed multi-overlaid image thereon,

a toner supply mechanism configured to replenish color toner to the image forming mechanism, and

an electric circuit including a plurality of circuit blocks and configured to supply power and necessary signals to the apparatus, and

a sheet supplying mechanism configured to supply recording sheets through a sheet inlet thereof to the image generating mechanism, the method comprising:

tilting the intermediate image-transfer member at a predetermined angle relative to a horizontal line such that a rear side of the intermediate image-transfer member away from the recording sheet is lifted and a front side of the intermediate image-transfer member closer to the recording sheet is lowered;

aligning the plurality of image creating mechanisms in parallel; and

arranging the plurality of image creating mechanisms along and parallel to the image transfer bed of the intermediate image-transfer member such that one of the plurality of image creating mechanisms firstly forming an image faces the rear side of the image transfer bed and another one of the plurality of image creating mechanisms lastly forming an image faces the front side of the image transfer bed.

Claim 34 (Previously Presented): The method as defined in Claim 33, wherein the image generating mechanism further includes a secondary image-transfer mechanism configured to contact the intermediate image-transfer member to transfer the multi-overlaid image onto the recording sheet from the intermediate image-transfer member, and the method further comprises:

disposing the sheet inlet of the sheet supply mechanism, the secondary image-transfer member, the fixing mechanism, and the sheet ejection mechanism in this order to positions from a lower region to an upper region of the apparatus; and

extending a sheet conveying path provided in an area covering from the sheet inlet to the sheet ejection mechanism through the secondary image-transfer mechanism and the fixing mechanism in nearly a straight manner in a vertical direction in the image generating mechanism.

Claim 35 (Original): The method as defined in Claim 33, further comprising:  
mounting the toner supply mechanism over the intermediate image-transfer member;  
setting the optical writing mechanism under the image forming mechanism; and  
angling the toner supply means at substantially an equivalent angle with the predetermined angle to be parallel with the image transfer bed of the intermediate image-transfer member.

Claim 36 (Original): The method as defined in Claim 35, wherein the plurality of image creating mechanisms form images of different colors, the toner supply mechanism includes a plurality of toner cartridges containing toners of the different colors used by the plurality of image creating mechanisms, and a placement order of the plurality of image creating mechanisms is same in color of toner as that of the plurality of toner cartridges.

Claim 37 (Original): The method as defined in Claim 36, wherein distances of sheet paths provided for the toners of the different colors between the plurality of image creating mechanisms and the plurality of toner cartridges are substantially equivalent.

Claim 38 (Original): The method as defined in Claim 36, wherein one or more of the plurality of toner cartridges have a toner capacity different than other toner cartridges of the apparatus.

Claim 39 (Original): The method as defined in Claim 35, further comprising:  
aligning the plurality of toner cartridges in parallel in a direction from a front side to a rear side of the apparatus such that one which is closer to the rear side has a higher profile;  
and  
mounting the plurality of toner cartridges at positions where the toner cartridges are externally accessible for exchanges with new cartridges when an upper cover of the apparatus is upwardly opened.

Claim 40 (Original): The method as defined in Claim 33, wherein the image generating mechanism forms a space having a cross section of approximately triangular shape underneath the optical writing mechanism, and  
wherein the method further comprises accommodating a part of the electrical circuit in the space.

Claim 41 (Original): The method as defined in Claim 40, wherein a part of the electrical circuit accommodated in the space underneath the optical writing mechanism is a control unit.

Claim 42 (Original): The method as defined in Claim 41, further comprising mounting another part of the electrical circuit which is a power supply unit outside the space and in the rear side of the apparatus behind the intermediate image-transfer member.

Claim 43 (Original): The method as defined in Claim 42, wherein when an origin of x-y coordination is assigned to a rearmost point of the apparatus at a horizontal level of a sheet separation point, T1 and T2 are highest and lowest points, respectively, of a rearmost toner cartridge of the plurality of toner cartridges closest to a rear end of the apparatus, T3 and T4 are highest and lowest points, respectively, of a forefront toner cartridge of the plurality of toner cartridges closest to a front end of the apparatus, HS is a sheet ejection point, TT is a fixing nip center of the fixing mechanism, T1(y) is a highest point in the apparatus, and T1(y) and TT(x) satisfy an inequality  $T1(y) \leq TT(x)$ .

Claim 44 (Original): The method as defined in Claim 43, wherein TT(y) and T3(y) satisfy an inequality  $TT(y) \leq T3(y)$ .

Claim 45 (Original): The method as defined in Claim 43, wherein T3(y), T4(y), and TT(y) satisfy inequalities  $T4(y) \leq TT(y) \leq T3(y)$ .

Claim 46 (Original): The method as defined in Claim 43, wherein HS(y) and T1(y) satisfy an inequality  $HS(y) \leq T1(y)$ .

Claim 47 (Original): The method as defined in Claim 27, wherein T2(y), HS(y), and T1(y) satisfy inequalities  $T2(y) \leq HS(y) \leq T1(y)$ .

Claim 48 (Original): A method as defined in Claim 33, wherein the predetermined angle with which the intermediate image-transfer member is tilted is in a range between approximately 5 degrees and 25 degrees.

Claim 49 (Previously Presented): The color image forming apparatus as defined in Claim 4, wherein a first distance between one of the toner cartridges and a corresponding one of the image creating mechanisms is equal to a second distance between another one of the toner cartridges and another corresponding one of the image creating mechanisms.

Claim 50 (Previously Presented): The color image forming apparatus as defined in Claim 20, wherein a first distance between one of the toner supply means and a corresponding one of the image creating means is equal to a second distance between another one of the toner supply means and another corresponding one of the image creating means.

Claim 51 (Previously Presented): The color image forming apparatus as defined in Claim 36, wherein a first distance between one of the toner cartridges and a corresponding one of the image creating mechanisms is equal to a second distance between another one of the toner cartridges and another corresponding one of the image creating mechanisms.

Claim 52 (Previously Presented): The color image forming apparatus as defined in Claim 4, wherein at least one of the toner cartridges is prismatic in shape.

Claim 53 (Previously Presented): The color image forming apparatus as defined in Claim 20, wherein at least one of the toner supply means is prismatic in shape.

Claim 54 (Previously Presented): The color image forming apparatus as defined in Claim 36, wherein at least one of the toner cartridges is prismatic in shape.

Claim 55 (New): A color image forming apparatus, comprising:

- a plurality of image carrying members;
- an image forming mechanism configured to form a plurality of respective images, in colors different from each other, on the plurality of image carrying members;
- an intermediate transfer member having an endless belt shape, arranged along the plurality of image carrying members, extended among at least two supporting members to form a portion through a primary transfer region facing the plurality of image carrying members, and configured to receive the plurality of respective images;
- a primary transfer mechanism arranged in the primary transfer region and configured to transfer the plurality of respective images from the plurality of image carrying members to the intermediate transfer member, in a sequential and overlaying manner, to form a single color image;
- a secondary transfer mechanism arranged in a secondary transfer region and configured to transfer the single color image from the intermediate transfer member to a recording medium;
- a fixing mechanism arranged in a fixing region downstream from the secondary transfer region, in a moving path of the recording medium, and configured to fix the single color image on the recording medium;



a sheet transport mechanism configured to transport the recording medium through the secondary transfer region and the fixing region;

a sheet ejection mechanism including,

a sheet ejection opening configured to eject the recording sheet, and

a sheet stacking surface arranged above the intermediate transfer member, including at least one inclined portion having one end closer to the sheet ejection opening and lower than another end of the at least one inclined portion, and configured to receive and stack the recording sheet; and

a plurality of toner containers arranged substantially along a first predetermined angle of the sheet stacking surface, between the image forming mechanism and the sheet stacking surface, and configured to contain respective toners of the colors different from each other,

wherein a portion of the intermediate transfer member running through the primary transfer region is arranged along a second predetermined angle of approximately 5 to 25 degrees, as defined by a supporting planar surface of the color image forming apparatus, and substantially along a direction of the at least one inclined portion of the sheet stacking surface.

Claim 56 (New): A color image forming apparatus of claim 55, wherein the first and second predetermined angles are substantially equal to each other.